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June 13, 2016

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Joseph Laydon
Town Planner
Grafton Municipal Center
30 Providence Road
Grafton, MA 01519

**PLANNING BOARD
GRAFTON, MA**

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**Subject: Trinity Avenue Pump Station – 25R Trinity Avenue
Special Permit and Site Plan Review**

Dear Joe:

We received the following documents on June 9, 2016:

- Correspondence from Tata & Howard to Joseph Laydon, Town Planner dated June 3, 2016 re: Trinity Avenue Pump Station-25 Trinity Avenue.
- Correspondence from Tata & Howard to Maria Mast, Conservation Agent dated June 3, 2016 re: Trinity Avenue Pump Station-25 Trinity Avenue.
- Bound document containing various stormwater-related materials.
- Sheets C-3, C-4, C-6 and C-7 of plans entitled Grafton Water District, Grafton, Massachusetts, Trinity Avenue Pump Station, Contract No. 2 dated June 2016, prepared by Tata & Howard. (4 sheets)

Graves Engineering, Inc. (GEI) has been requested to review and comment on the plans' conformance with applicable "Grafton Zoning By-Law" amended through October 19, 2015; Massachusetts Department of Environmental Protection (MADEP) Stormwater Management Policy and standard engineering practices on behalf of the Planning Board. GEI has also been requested to review and comment on the documents' conformance with applicable "1988 Rules and Regulations for the Administration of the Town of Grafton Local Wetlands By-Law" amended July 2005 on behalf of the Conservation Commission. As part of our initial review GEI performed a reconnaissance site visit on April 11, 2016.

This letter is a follow-up to our previous review letters dated April 15, 2016 and May 12, 2016. For clarity, comments from our previous letters are *italicized* and our latest comments to the Applicant's responses are depicted in **bold**. For brevity, comments previously addressed by the design engineer and acknowledged by GEI have been omitted. Previous comment numbering has been maintained.

Our comments follow:

Zoning By-Law

Zoning By-Law comments (Comments 1-10) were previously addressed.

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Regulations for the Administration of the Wetlands By-Law

11. The plans only note the perimeter layout of a compensatory flood storage area. The plans must show the proposed elevations (by topographic contours and/or spot elevations as appropriate) within the compensatory storage area. Also, there need to be calculations (and supporting plans or sketches where necessary) that show the flood plain earth fill volumes and compensatory storage volumes in vertical foot increments. (§V.B.5(a))

May 12, 2016:

Spot elevations were added to Sheet C-3. Compensatory storage volumes are to be submitted prior to the next Conservation Commission meeting. As such, GEI can't offer follow-up comments at this time relative to the adequacy of the compensatory storage area.

Acknowledged. Sheet C-3 was revised to include three compensatory storage areas with revised topographic contours and spot elevations, and a table of floodplain fill volumes and compensatory storage volumes was submitted. The proposed compensatory storage areas are reasonable.

The design engineer also discussed an alternative to the compensatory storage areas in order to reduce the overall clearing and disturbance. The discussion was relative to excavating along the edges of the driveway/gravel turnaround area. This concept is not unreasonable, but there needs to be a way to document the proposed compensatory storage volume in order to verify that floodplain filling is adequately mitigated.

Hydrology & MADEP Stormwater Management

May 12, 2016:

The designer responded to comments 12-15, 17 and 18 narratively and referenced a yet-to-be-submitted revised stormwater report. GEI will provide follow-up comments once we receive a copy of the revised stormwater report.

April 15, 2016:

12. The project was not identified as a critical area in the MassDEP Checklist for Stormwater Report. In our opinion, the Checklist for Stormwater Report must be revised to indicate that the project is located in a critical area (Zone I of the new public water supply wells).

Acknowledged. The Checklist for Stormwater Report was revised.

13. Drainage maps showing drainage basin delineations were not included with the Stormwater Report. Nevertheless we don't have an issue with the pre- and post-development drainage areas used in the Rational Method calculations for pre- and post-development peak rates of runoff. Nevertheless, if the Stormwater Report is resubmitted for any reason, the revised report needs to include pre- and post-development drainage area plans.

Acknowledged. Maps showing the pre- and post-development drainage areas were submitted.

14. The calculations used to determine peak discharge rates in the pre- versus post-development conditions used the same "C" coefficient for both conditions. (The "C" coefficient represents ground cover.) The post-development "C" coefficients don't account

for the driveway on the north portion of the site nor do they account for the gravel and grass ground cover on the southern portion of the site.

Acknowledged. The post-development “C” coefficients were revised.

15. *The submission did not include calculations that demonstrated that the post-development peak discharge rates do not exceed the pre-development peak discharge rates for the 2-year and 10-year storm event. Calculations for the 2-year and 10-year storm event must be submitted as required by Stormwater Management Standard 2.*

Acknowledged. Calculations were submitted. The calculations show a nominal decrease in peak runoff rates.

16. *Soil testing data was not provided to show the seasonal high groundwater elevation. GEI could not determine if the proposed elevation of the infiltration system will satisfy the minimum two-foot offset to groundwater. The bottom of the stone surrounding the chambers (elevation 287.5 feet) is lower than the nearby wetland resource area.*

May 12, 2016:

The designer responded that due to the inability to access the site, the contractor will be required to complete a test pit under the direction of a certified soils evaluator. Confirmatory soils testing witnessed by an agent for the Planning Board would not be unreasonable.

However, this water supply project likely included exploratory work that generated groundwater elevation data. Until confirmatory soils testing can be accomplished, it would be prudent to utilize currently-available data for the basis of designing the subsurface recharge system. Such data should be provided in the pending revised stormwater report. On Sheet C-6 the bottom of the chambers was revised to elevation 292.7 feet; the revised elevation was based upon findings at Boring B-2. The design engineer has committed to performing confirmatory soil testing as a condition of approval. The revision addresses our immediate concern relative to preliminary system elevation and we don't have an issue with confirming this design assumption with confirmatory testing once access to the area is secured.

17. *The Construction Period Stormwater Pollution Prevention Plan refers to Appendix F, however this appendix was not provided. Appendix F must be provided with the Stormwater Report.*

Acknowledged. The Construction Period Stormwater Pollution Prevention Plan was revised to refer to Attachment 6, which contains the pertinent information.

18. *The Long Term Pollution Prevention Plan refers to Appendix G, however this appendix was not provided. Appendix G must be provided with the Stormwater Report.*

Acknowledged. The Long Term Pollution Prevention Plan was revised to refer to Attachment 5, which contains the pertinent information.

General Engineering

19. *GEI did not review the structural design of the bridge or abutments.*

No further comment.

32. To prevent sediment from entering Trinity Avenue, a stabilized construction entrance needs to be installed and maintained at the site entrance until the driveway pavement is placed.

May 12, 2016:

Per the designer's response letter Sheet C-2 was revised, but we couldn't find the revision on the plan sheet.

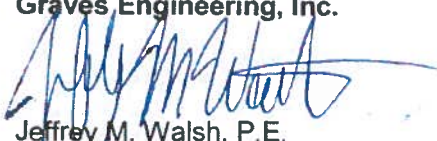
Per the design engineer's response, Sheet C-2 was revised to include a stabilized construction entrance; however we didn't receive a copy of Sheet C-2 to confirm the revision. Specifications Section 01100.3.01.A requires the installation of a stabilized construction entrance.

Conservation Commission-Related Issues

Conservation Commission-Related Issues (Comments 34 and 35) were previously addressed.

We trust this letter addresses your review requirements. Feel free to contact this office if you have any questions or comments.

Very truly yours,
Graves Engineering, Inc.



Jeffrey M. Walsh, P.E.
Vice President

cc: Grafton Conservation Commission
Matthew S. Barry, Tata & Howard
Matthew Pearson, Grafton Water District